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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,744	02/06/2004	Kurt D. Sieber	83996RLO	8618

7590 07/28/2005  
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EXAMINER

DANG, TRUNG Q

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/773,744

Applicant(s)

SIEBER ET AL.

Examiner

Trung Dang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4, 11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 11 and 13 is/are allowed.
- 6) ☒ Claim(s) 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Hasegawa et al. (US 2004/0031926) in view of Seki (US 2003/0137242), all of record.

With reference to Figs. 5 - 6, Hasegawa teaches a method of making an electronic device in which a conductive electrode 4 of indium-tin-oxide (ITO) has been formed over a substrate, comprising:

producing a fluorocarbon plasma in a plasma apparatus to form a fluorocarbon layer CF<sub>x</sub> 35 over the conductive electrode by selecting a mixture of gases including a fluorine containing gas CF<sub>4</sub> which will cause a thicker deposition of the fluorocarbon layer CF<sub>x</sub> 35 over the electrode than regions adjacent to the electrode.

See paras. [0086], [0087], [0091]. Note that, as shown in Fig. 6, the CF<sub>x</sub> layer 35 is formed only over electrode 4 but not over adjacent regions comprising layer 33, hence the claimed limitation regarding a thicker deposition of the fluorocarbon layer

over the electrode than regions adjacent to the electrode is met by the reference.

Hasegawa differs from the claims in not disclosing an oxidizing plasma process to modify the properties of the electrode as recited in step a) of claim 15.

Seki teaches a plasma treatment process in which a surface of an ITO electrode is first treated with O<sub>2</sub> plasma to modify the properties of the electrode and then the modified electrode is treated with fluorocarbon-based plasma including CF<sub>4</sub> plasma (paras. [0180], [0182], [0184], [0186], [0187]).

It would have been obvious to one of ordinary skill in the art to modify Hasegawa's process by modifying the properties of the electrode 4 using the O<sub>2</sub> plasma treatment prior to the fluorocarbon-based plasma treatment as suggested by Seki because the O<sub>2</sub> plasma treatment would facilitate fluorination therefore enhancing the adherence of the fluorocarbon layer CF<sub>x</sub> 35 to the electrode 4.

For the claimed limitation regarding the use of appropriately positioned plasma producing electrodes, see Fig. 7 in Seki.

For claim 16, the mixture of gases (CF<sub>4</sub> and O<sub>2</sub>) disclosed in para. [0087] of the primary reference does not contain hydrogen, a noble gas, and a hydrogen containing gas.

For claim 17, while Hasagawa teaches in para. [0106] that the above fluorocarbon plasma treatment can be performed by exposing electrode 4 to radicals containing fluorine that is generated in a plasma formed from a gas mixture of CF<sub>4</sub>, CHF<sub>3</sub> and Ar, the claim calls for a gas mixture contain CF<sub>4</sub>, CHF<sub>3</sub> and helium (He).

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However, substitution of He for Ar in the gas mixture of Hasegawa would have been obvious to one of ordinary skill in the art because He and Ar are both belong to a group of rare gases (He, Ne, Ar, Kr, Xe, Rn) that exhibit similar chemical properties, hence one skilled in the art would reasonable expect that using He in place of Ar in the gas mixture of Hasegawa would yield similar effect.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 is indefinite in that claim 17 depends on claim 16 which recites a mixture of gases that is **not** containing a noble gas and a hydrogen containing gas, yet claim 17 recites the gas mixture contain helium and CHF<sub>3</sub> which are a noble gas and a hydrogen containing gas, respectively

***Allowable Subject Matter***

4. Claims 4, 11, 13, 14 are allowed over prior art of record.
5. The following is an examiner's statement of reasons for allowance:

Claim 13 and its dependent claims are allowed over prior art of record because the prior art does not teach or suggest the claimed subject matter, which includes the

claimed feature regarding using a shaped electrodes to produce a spatially modulated fluorocarbon plasma in the chamber so as to form a fluorocarbon layer in selected areas of the substrate electrode structure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trung Dang  
Primary Examiner  
Art Unit 2823



07/25/05

Handwritten signature of Trung Dang.